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EXAMINER	
HSIEH, PING Y	

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2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,327	MINOTANI ET AL.	
	Examiner	Art Unit	
	PING Y. HSIEH	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 22-29* is/are rejected.

7)☒ Claim(s) *19-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/13/05, 12/06/05, 6/2/06, 10/3/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant traversed the restriction requirement of 06 August 2008, and it is persuasive. Therefore, the election of Species is withdrawn. Claims 1-29 are currently pending.

Claim Objections

2. Claim 1-17 and 22-26 are objected to because of the following informalities: the transitional phrase for claim 1 is missing. Appropriate correction is required.

Specification

3. The disclosure is objected to because of the following informalities: The typographical error in page 23 line 20 of the specification, "the contacts b4 and c4 are connected in the switch 4", should be "the contacts a4 and c4 are connected in the switch 4" in order for the zero voltage from the constant voltage source 12 to be inputted into the integrator 11 as described in page 23 lines 22-24.

Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

-Claims 1 and 27-29 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 36 of U.S. Patent No. 7,069,062 in view of Lee et al. U.S. PG-PUB No. 2002/0033729, hereinafter referred as Lee. Although the conflicting claims are not identical, they are not patentably distinct from each other because both disclose a communication apparatus that transmits and/or receives a signal via an electric field transmittable medium and said electric field transmittable medium **(a transceiver for inducing electric fields according to data to be transmitted in an electric field propagating medium, claim 1)**, a signal generation section generating a probe signal **(a transmission unit configured to modulate the data to be transmitted by generating alternating current signals having a prescribed frequency, and transmit modulated signals obtained by modulating the data to be transmitted, claim 1)**, an electrode

inducing an electric field based on said probe signal in said electric field transmittable medium **(a transmission and reception electrode configured to induce the electric fields according to the data to be transmitted and receive the electric fields according to the data to be received, claim 2)**, a resonance section that is connected between said signal generation section and said electrode **(the resonance causing unit being connected in series with the transmission unit and the transmission and reception electrode, claim 2)** and induces a series resonance by adjusting reactance against parasitic capacitance induced between said electric field transmittable medium, said communication apparatus, and an earth ground **(a resonance causing unit configured to cause a series resonance with a parasitic capacitance appearing between a ground for the transmission unit and an earth ground and a parasitic capacitance appearing between the electric field propagating medium and the earth ground, claim 1)**, an adjusting signal generation section outputting alternatingly a high level signal and a low level signal to said resonator section **(an adjustment signal generation unit configured to output an adjustment signal for periodically changing an amplitude of the electric signal outputted from the electric field detection unit, claim 36)**, an electric field detection section that receives an electric field in said electric field transmittable medium and generates an electric signal based on the received electric field **(an electric field detection unit configured to detect the electric the electric fields according to the data to be received,**

and convert each detected electric field into an electric signal, claim 2), a signal output section including and a voltage comparator comparing voltages to output a predetermined signal in accordance with the comparison result **(a differential amplifier configured to obtain a difference between the reference signal and an output signal of the amplifier, and amplify the difference, claim 3)**, and a control section that outputs a voltage having a constant voltage value to said resonator section and inputs said predetermined signal to output a voltage based on the inputted predetermined signal to said resonator section **(a control unit configured to output a control signal for controlling a characteristic of the resonance causing unit by using the electric signal converted by the electric field detection unit and a reference signal according to the modulated signal, claim 2)**. However, the conflict claims does not explicitly disclose the signal output section including a first electric charge storing means storing an electric charge in accordance with said electric signal while said adjusting signal generation section outputs a high level signal to said resonator section, a second electric charge storing means storing an electric charge in accordance with said electric signal while said adjusting signal generation section outputs a low level signal to said resonator section, and the voltage comparator is comparing a voltage across said first electric charge storing means and a voltage across said second electric charge storing means to output a predetermined signal in accordance with the comparison result, and the control section that outputs a voltage having a constant voltage value to said

resonator section while either one of said first and said second electric charge storing means is storing an electric charge, and inputs said predetermined signal to output a voltage based on the inputted predetermined signal to said resonator section while said first and second electric charge storing means stop storing an electric charge.

Lee discloses a capacitor C_{in} connected to one input of an amplifier as shown in fig. 2; the capacitor C_{in} charges in a first time interval, and applies the charged voltage to the amplifier in a second time interval as disclosed in paragraph 32.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the signal output section to include capacitors connected to the inputs of the voltage comparator for storing electric charges in accordance with said electric signal while said adjusting signal generation section outputs a high/low level signal to said resonator section; and also the voltage comparator and control section can operate accordingly. One is motivated as such in order to reproduce the captured signals with great precision to insure that the information of interest can be reliably obtained.

-Claims 2-17 and 22-26 are rejected on the ground of nonstatutory obviousness-type double patenting as being dependent upon a rejected base claim, but would be withdrawn from the rejection if their base claims overcome the rejection by the timely filling of a terminal disclaimer.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 18 recites the limitation "said other end of said connection means" in lines 14-15. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Li (U.S. Patent No. 6,137,375).

-Regarding claim 18, Li discloses a signal processing circuit **(as shown in fig. 6A and 6B)** comprises a first connection means **(switch S_1, fig. 6A and 6B)**, one end of which is connected to a positive electrode of a voltage source outputting a predetermined voltage **(V_{dd}, as disclosed in fig. 6B)**, a second connection means **(switch S_2, fig. 6A and 6B)**, one end of which is connected to the other end of said first connection means **(as shown in fig. 6B)** and the other end of which is connected to a negative electrode of said voltage source **(ground as disclosed in fig. 6B)**, a first comparison means **(i.e. comparator 514, fig. 6A)** comparing a predetermined first threshold voltage and said predetermined

signal to output a signal for turning on said first connection means when said predetermined signal **(i.e. V_{ENV})** is lower than said first threshold voltage **(i.e. V_{REF}) (when $V_{REF} > V_{ENV}$, the output U of comparator 514 goes high sending a signal to turn on switch S_1 as shown in fig. 6A and 6B and further disclosed in col. 9 lines 44-56)** a second comparison means **(i.e. comparator 518, fig. 6A)** comparing a second threshold voltage **(i.e. V_{ENV})** higher than said first threshold voltage **(i.e. V_{REF})** and said predetermined signal to output a signal for turning on said connection means when said predetermined signal is higher than said second threshold voltage **(when $V_{ENV} > V_{REF}$, the output D of comparator 518 goes high sending a signal to turn on switch S_1 as shown in fig. 6A and 6B and further disclosed in col. 9 lines 44-56)**, and a capacitor, one end of which is connected to said other end of said first connection means and the other end of which is connected to said negative electrode **(capacitor C_{INT} as shown in fig. 6A and 6B)**.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1, 2, 13-17 and 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art of fig. 1, hereinafter referred as AAPA, in view of Lee et al. (U.S. PG-PUB No. 2002/0033729), hereinafter referred as Lee.

-Regarding claims 1, 24 and 26-29, AAPA discloses a reactance adjuster for adjusting reactance caused by a communication apparatus that transmits and/or receives a signal via an electric field transmittable medium **(living body 121, fig. 1)** and said electric field transmittable medium **(living body 121, fig. 1)**, a signal generation section generating a probe signal **(modulation circuit 101 and oscillator 125, fig. 1)**, an electrode **(element 123, fig. 1)** inducing an electric field based on said probe signal in said electric field transmittable medium **(living body 121, fig.1)**, a resonance section **(element 106, fig. 1)** that is connected between said signal generation section **(modulation circuit 101 and oscillator 125, fig. 1)** and said electrode **(element 123, fig. 1)** and induces a series resonance by adjusting reactance against parasitic capacitance induced between said electric field transmittable medium, said communication apparatus, and an earth ground **(as disclosed in page 2 line 24-page 3 line 1 of the**

applicant's specification), an adjusting signal generation section outputting alternatingly a high level signal and a low level signal to said resonator section **(adjusting signal source 114, fig. 1)**, an electric field detection section that receives an electric field in said electric field transmittable medium and generates an electric signal based on the received electric field **(electric field detection optical section 116, fig. 1)**, a signal output section including and a voltage comparator comparing voltages to output a predetermined signal in accordance with the comparison result **(comparator 111, fig. 1)**, and a control section that outputs a voltage having a constant voltage value to said resonator section and inputs said predetermined signal to output a voltage based on the inputted predetermined signal to said resonator section **(constant voltage source 113, fig. 1)**. However, AAPA does not explicitly disclose the signal output section including a first electric charge storing means storing an electric charge in accordance with said electric signal while said adjusting signal generation section outputs a high level signal to said resonator section, a second electric charge storing means storing an electric charge in accordance with said electric signal while said adjusting signal generation section outputs a low level signal to said resonator section, and the voltage comparator is comparing a voltage across said first electric charge storing means and a voltage across said second electric charge storing means to output a predetermined signal in accordance with the comparison result, and the control section that outputs a voltage having a constant voltage value to said resonator section while either one of said first and

said second electric charge storing means is storing an electric charge, and inputs said predetermined signal to output a voltage based on the inputted predetermined signal to said resonator section while said first and second electric charge storing means stop storing an electric charge.

Lee discloses a capacitor C_{in} connected to one input of an amplifier as shown in fig. 2; the capacitor C_{in} charges in a first time interval, and applies the charged voltage to the amplifier in a second time interval as disclosed in paragraph 32.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the signal output section to include capacitors connected to the inputs of the voltage comparator for storing electric charges in accordance with said electric signal while said adjusting signal generation section outputs a high/low level signal to said resonator section; and also the voltage comparator and control section can operate accordingly. One is motivated as such in order to reproduce the captured signals with great precision to insure that the information of interest can be reliably obtained.

-Regarding claim 2, the combination further discloses said control section comprises a constant voltage source **(AAPA, constant voltage source 113, fig. 1)** outputting the voltage having a predetermined voltage value, an integrator **(AAPA, integrator 112, fig. 1)** outputting a voltage having said constant voltage value when receiving the voltage having said predetermined voltage value and outputting a voltage based on said predetermined signal when receiving said

predetermined voltage to said resonator section **(AAPA, element 106, fig. 1)**, an output switching section **(AAPA, switch 105, fig. 1)** inputting selectively the voltage having said predetermined voltage value or said predetermined signal, thus outputting said voltage having said predetermined voltage value to said integrator **(AAPA, integrator 112, fig. 1)** while either one of said first and said second electric charge storing means **(capacitor C_{in} as disclosed by Lee)** is storing an electric charge and outputting said predetermined signal to said integrator **(AAPA, integrator 112, fig. 1)** when said first and second electric charge storing means stop storing an electric charge.

-Regarding claim 13, the combination further discloses said signal output section further comprises a detection means **(AAPA, detectors 107, 109, as disclosed in fig. 1)** detecting an amplitude of said electric signal to output a detection voltage in accordance with said amplitude, and a filter **(AAPA, filters 108, 110, as disclosed in fig. 1)** eliminating a high harmonics component from said detection voltage.

-Regarding claims 14-16, the combination further discloses said signal output section further comprises a peak-hold means holding a peak value of an amplitude of said electric signal to output a voltage in accordance with the peak value **(AAPA, detectors 107, 109 and filters 108, 110 as disclosed in fig. 1)**.

-Regarding claim 17, the combination further discloses said control section further comprises an adder **(AAPA, adder 115, fig. 1)** adding a voltage based on a voltage having said constant voltage value outputted to said resonance section

(AAPA, element 106, fig. 1) from said control section or a voltage based on said predetermined signal and a high level signal or a low level signal being alternatingly outputted to said resonance section **(AAPA, element 106, fig. 1)** from said adjusting signal generation section **(AAPA, adjusting signal source 114, fig. 1)**.

-Regarding claims 22 and 25, the combination further discloses an interface portion **(AAPA, I/O circuit, 122, fig. 1)** for use in communication with a computer managing data to be transmitted, a data signal generation portion provided between said interface portion **(AAPA, I/O circuit, 122, fig. 1)** and said resonance portion, said data signal generation portion generating a signal wave including data to be transmitted obtained via said interface portion **(AAPA, I/O circuit, 122, fig. 1)** to supply the data to said resonance portion **(AAPA, resonance portion 106, fig. 1)**, and a receiving portion **(AAPA, signal processing section 117, fig. 1)** provided between said interface portion **(AAPA, I/O circuit, 122, fig. 1)** and said electrode **(AAPA, electrode 123, fig. 1)**, said receiving portion **(AAPA, signal processing section 117, fig. 1)** detecting an electric field in said electric field transmittable medium via said electrode **(AAPA, electrode 123, fig. 1)** and obtaining data to be received from the electric field detected so as to supply the data to said interface portion **(AAPA, I/O circuit, 122, fig. 1)**.

-Regarding claim 23, the combination further discloses said receiving portion **(AAPA, signal processing section 117, fig. 1)** inputs a converted

electric signal from said electric field detection portion **(AAPA, electric field detection optical section 116, fig. 1)** and obtains data to be received from the electric signal to supply to said interface portion **(AAPA, I/O circuit, 122, fig. 1)**.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA, in view of Lee et al. (U.S. PG-PUB No. 2002/0033729) and further in view of Li (U.S. Patent No. 6,137,375).

-Regarding claim 3, the combination of AAPA and Lee teaches all the limitations as claimed in claims 1 and 2. However, the combination does not specifically disclose said integrator comprises a first connection means, one end of which is connected to a positive electrode of a voltage source outputting a predetermined voltage, a second connection means, one end of which is connected to the other end of said first connection means and the other end of which is connected to a negative electrode of said voltage source, a first comparison means comparing a predetermined first threshold voltage and said predetermined signal to output a signal for turning on said first connection means when said predetermined signal is lower than said first threshold voltage, a second comparison means comparing a second threshold voltage higher than said first threshold voltage and said predetermined signal to output a signal for turning on said connection means when said predetermined signal is higher than said second threshold voltage, and a capacitor, one end of which is connected to

said other end of said first connection means and the other end of which is connected to said negative electrode.

Li discloses an integrator **(as shown in fig. 6A and 6B)** comprises a first connection means **(switch S_1, fig. 6A and 6B)**, one end of which is connected to a positive electrode of a voltage source outputting a predetermined voltage **(V_{dd}, as disclosed in fig. 6B)**, a second connection means **(switch S_2, fig. 6A and 6B)**, one end of which is connected to the other end of said first connection means **(as shown in fig. 6B)** and the other end of which is connected to a negative electrode of said voltage source **(ground as disclosed in fig. 6B)**, a first comparison means **(i.e. comparator 514, fig. 6A)** comparing a predetermined first threshold voltage and said predetermined signal to output a signal for turning on said first connection means when said predetermined signal **(i.e. V_{ENV})** is lower than said first threshold voltage **(i.e. V_{REF}) (when $V_{REF} > V_{ENV}$, the output U of comparator 514 goes high sending a signal to turn on switch S_1 as shown in fig. 6A and 6B and further disclosed in col. 9 lines 44-56)** a second comparison means **(i.e. comparator 518, fig. 6A)** comparing a second threshold voltage **(i.e. V_{ENV})** higher than said first threshold voltage **(i.e. V_{REF})** and said predetermined signal to output a signal for turning on said connection means when said predetermined signal is higher than said second threshold voltage **(when $V_{ENV} > V_{REF}$, the output D of comparator 518 goes high sending a signal to turn on switch S_1 as shown in fig. 6A and 6B and further disclosed in col. 9 lines 44-56)**, and a capacitor, one end of which is

connected to said other end of said first connection means and the other end of which is connected to said negative electrode **(capacitor C_{INT} as shown in fig. 6A and 6B)**.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of invention to modify the integrator as disclosed by AAPA and Lee to include the integrator circuit as disclosed by Li. One is motivated as such in order to provide the integrator to operate in a steady state.

Allowable Subject Matter

13. Claims 4-12 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PING Y. HSIEH whose telephone number is (571)270-3011. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. Y. H./
Examiner, Art Unit 2618